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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,860	08/17/2001	Craig M. Carpenter	4880US (01-0170)	6588

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EXAMINER

ZERVIGON, RUDY

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,860

Applicant(s)

CARPENTER ET AL.

Examiner

Rudy Zervigon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, Claims 1-13 in Paper No. 7 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-5, and 7-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 requires "...the heating device including a first, nonheated section and a second, heated section, wherein a portion of the second heated section". The format of the claim thus implies the existence of a first heated section, and not that the second section of the heating device is heated. Correction is required.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1-5, and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sajoto et al (USPat. 6,056,823) in view of Whitney (USPat. 4,638,150).
Sajoto teaches a deposition chamber (12, Figure 2; column 4, lines 45-67) including:
 - i. A chamber body (12) having a cavity (55, 20; Figure 3A, column 6, lines 45-65) formed therein

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- ii. A chamber lid (14, Figure 2; column 4, lines 45-67) configured to enclose the cavity (Figure 2)
- iii. A vapor delivery head (26, Figure 2; column 5, lines 23-35) positioned within the cavity
- iv. A feed through device (40, Figure 3A; column 6, lines 12-44), having a longitudinal body portion (conduit for 40 (not labeled); Figure 3A; compare 208, Figure 2 of Application, [0036]) positioned in the chamber including a lumen (42/44 passage) as a longitudinal body, the feed through device being configured to receive vapor from a vapor source and transfer the vapor there through along a pathway (42, 44; Figure 2, 3A; column 5, line 65 – column 6, line 11) toward the vapor delivery head
- v. A resistance (“power lead 67”; column 6, lines 37-44) heating device / resistor element (64, Figure 3A; column 6, lines 30-44) associated with the feed through device
- vi. The heating device includes the resistance heater wherein at least a portion of the resistance heater is positioned within the continual helical groove (62/64 interface) of the feed through device – The heater wires are shown in Figure 3A as staggered vertically in cross section which is a helical structure. As shown in Figure 3A, the continual helical groove is configured to complementarily receive the resistance heater (64)

The resistance heater further includes a pair of electrical resistance leads – terminal portion of 67, Figure 3A,

Sajoto further teaches electrical resistance leads (64, Figure 3A) shown to wind along the feed through. Sajoto also further shows (Figure 3A) that his heater (64) is formed into a helical pattern complementary with a continual helical groove.

Sajato does not teach:

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- i. Electrical resistance leads having at least a portion thereof disposed within a stainless steel thermally conductive sheathing
- ii. Two resistor elements
- iii. The heating device further includes a thermocouple positioned within the thermally conductive sheathing
- iv. That his heater is either adhered or welded to the feed through device
- v. A layer of thermal insulation disposed between the at least a portion of the heated section of the heating device and the chamber body and substantially circumscribing the longitudinal body portion and the at least a portion of the second heated section
- vi. A temperature sensing device positioned between the layer of insulation and the longitudinal body portion of the feed through device

Whitney teaches a flexible wire heater device (30, Figure 4; column 2, line 42 – column 3, line 5) including:

- vii. Electrical resistance leads / resistor elements (40; Figure 4; column 5, lines 19-35) having at least a portion thereof disposed within a stainless steel thermally conductive sheathing (46; Figure 4; column 5, lines 19-35)
- viii. The heating device further includes a thermocouple¹ (“PTC component 14”, “temperature-responsive component 14”; column 4, lines 54-68) positioned within the thermally conductive sheathing to form a “self-limiting” heater (column 4, lines 39-40)
- ix. A layer of thermal insulation (42/44/42 column 5, lines 30-35) disposed between the at least a portion of the heated section (40) of the heating device

¹ USPat. 4,480,930 demonstrates that PTCs are thermocouples (column 3, line 63).

- x. A temperature sensing device ("PTC component 14", "temperature-responsive component 14"; column 4, lines 54-68) positioned inside the layer of insulation

Whitney et al does not specify how his thermally conductive sheathing is formed. However, it is well established that in product-by-process claims (MPEP 2113), the patentability of a product ("sheathing") does not depend on its method of production ("cold formed"). If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace Sajoto's heater with Whitney's heater, and thereby substantially circumscribing the longitudinal body portion and the at least a portion of heated section, by either adhering or welding Whitney's heater to Sajoto's feed through device.

Motivation to replace Sajoto's heater with Whitney's heater by either adhering or welding Whitney's heater to Sajoto's feed through device is to provide a heater with a temperature-responsive component to limit elevated temperatures as taught by Whitney (column 2, line 64 – column 3, line 2).

Response to Arguments

6. Applicant's arguments filed March 24, 2003 have been fully considered but they are not persuasive.

7. Applicant's arguments are directed to the substance of the amendment to claim 1. Applicant is directed to the body of the above new claim rejections as necessitated by the amendment filed March 24, 2003.

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8. With regard to Applicant's position that Whitney does not teach a thermocouple, Applicant is referred to the claim rejections above and the demonstration by USPat. 4,480,930 to DeZubay et al who demonstrates that PTCs are thermocouples (column 3, line 63) as is known in the art.

9. The Examiner maintains his position that claim 11 is a product-by-process claim, and provides proper analysis thereof.

Conclusion

10. Applicant's amendment necessitated the new ground of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (703) 305-1351. The examiner can normally be reached on a Monday through Thursday schedule from 8am

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through 7pm. The official after final fax phone number for the 1763 art unit is (703) 872-9311. The official before final fax phone number for the 1763 art unit is (703) 872-9310. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (703) 308-0661. If the examiner can not be reached please contact the examiner's supervisor, Gregory L. Mills, at (703) 308-1633.



JEFFRIE R. LUND
PRIMARY EXAMINER